AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1-2. (Canceled).

3. (Currently Amended) A control unit for controlling a motor for use in a printer, comprising;

a speed control part to control an object to be controlled that is driven by the motor by acceleration control, constant speed control, deceleration control, and stoppage control by controlling a current to be applied to the motor;

an inertia calculating part to calculate inertia of the object based on angular acceleration of the motor under the acceleration control of the object, and current values to be applied to the motor under the acceleration control and the constant speed control of the object , the calculated inertia being used by the speed control part for controlling the current to be applied to the motor; and,

a stoppage current calculating part to calculate a stoppage current to be used for stopping the object at a target position based on the calculated inertia, an angular velocity of the motor under the deceleration control of the object, the current value of the motor under the constant speed control of the ~~objectm abd~~ object, and a stoppage constant T_{BRK}, the speed control part performing control of stopping the object by applying the calculated stoppage current,

wherein a predetermined current value Iacc is applied to the motor in a constant current

acceleration range under the acceleration control for accelerating the object, the inertia

calculation part calculating angular acceleration $\Delta\omega / \Delta t$ in the constant current acceleration

range, and calculating inertia J of the object based on the angular acceleration $\Delta\omega / \Delta t$, a current

value I_f to be applied to the motor under the constant speed control of the object, and the current

value Iacc.

4-11. (Canceled).

12. (Original) A computer-readable storage medium storing control program code for

controlling a motor for use in a printer, comprising:

first program code means for calculating inertia of a carriage based on angular

acceleration of a carriage motor under acceleration control of the carriage and current values to

be applied to the carriage motor under the acceleration control and constant speed control of the

carriage;

second program code means for calculating a stoppage current to be used for stopping the

carriage at a target position based on the calculated inertia, an angular velocity of the motor

under deceleration control of the carriage, the current value to be applied to the motor under the

constant speed control of the carriage, and a stoppage constant T_{BRK}; and

third program code means for stopping the carriage by applying the calculated stoppage

current to the motor.

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13. (Canceled).

14. (Currently Amended): A control unit for controlling a carriage motor for use in a printer, ~~as set forth in claim 13, further~~ comprising:

a speed control part to control a carriage to be controlled that is driven by the motor by acceleration control, constant speed control, deceleration control, and stoppage control by controlling a current to be applied to the motor;

an inertia calculating part to calculate inertia of the carriage based on angular acceleration of the motor under the acceleration control of the carriage, and current values to be applied to the motor under the acceleration control and the constant speed control of the carriage, the calculated inertia being used by the speed control part for controlling the current to be applied to the motor; and

a stoppage current calculating part to calculate a stoppage current to be used for stopping the carriage at a target position based on the calculated inertia, an angular velocity of the motor under the deceleration control of the carriage, the current value of the motor under the constant speed control of the carriage, and a stoppage constant T_{BRK}, the speed control part performing control of stopping the carriage by applying the calculated stoppage current.

15. (Previously Presented) A control unit for controlling a carriage motor for use in a printer, as set forth in claim 14, wherein a predetermined current value Iacc is applied to the motor in a constant current acceleration range under the acceleration control for accelerating the carriage, the inertia calculation part calculating angular acceleration $\Delta\omega / \Delta t$ in the constant

current acceleration range, and calculating inertia J of the carriage based on the angular

acceleration $\Delta\omega$ / Δt, a current value I_f to be applied to the motor under the constant speed

control of the carriage, and the current value Iacc.

16. (Canceled).

17. (Currently Amended) A method of controlling a carriage motor for use in a printer,

~~as set forth in claim 16,~~ comprising:

calculating inertia of a carriage to be driven by the motor based on angular acceleration

of the motor under acceleration control of the carriage, and current values to be applied to the

motor under the acceleration control and a constant speed control of the carriage; and

controlling a current to be applied to the motor by means of the calculated inertia,

wherein the controlling of the current comprises:

calculating a stoppage current to be used for stopping the carriage at a target

position based on the calculated inertia, an angular velocity of the motor under

deceleration control of the carriage, the current value of the motor under the constant

speed control of the carriage, and a stoppage constant T_{BRK}; and

stopping the carriage by applying the calculated stoppage current to the motor.

18. (Currently Amended): A method of controlling a carriage motor for use in a printer,

as set forth in claim ~~16~~ 17, wherein the printer is a serial printer.

19. (Previously Presented) A control unit for controlling a motor for use in a printer,

comprising:

a speed control part to control an object to be controlled that is driven by the motor by

acceleration control, constant speed control, deceleration control, and stoppage control by

controlling a current to be applied to the motor; and

an inertia calculating part to calculate inertia of the object based on angular acceleration

of the motor under the deceleration control of the object, and current values to be applied to the

motor under the deceleration control and the constant speed control of the object, during the

deceleration control after a printing processing is completed, the calculated inertia being used by

the speed control part for controlling the current to be applied to the motor.

20. (Previously Presented) A control unit for controlling a motor for use in a printer, as

set forth in claim 19, further comprising a stoppage current calculating part to calculate a

stoppage current to be used for stopping the object at a target position based on the calculated

inertia, an angular velocity of the motor under the deceleration control of the object, the current

value of the motor under the constant speed control of the object, and a stoppage constant T_{BRK},

the speed control part performing control of stopping the object by applying the calculated

stoppage current.

21. (Previously Presented) A control unit for controlling a motor for use in a printer, as

set forth in claim 20, wherein a predetermined current value Iacc is applied to the motor in a

constant current acceleration range under the acceleration control for accelerating the object, the

inertia calculation part calculating angular acceleration $\Delta\omega$ / Δt in the constant current

acceleration range, and calculating inertia J of the object based on the angular acceleration $\Delta\omega$ /

Δt, a current value I_f to be applied to the motor under the constant speed control of the object,

and the current value Iacc.

22. (Previously Presented) A control unit for controlling a motor for use in a printer, as

set forth in claim 21, wherein the current value I_f corresponds to a speed of the object under

constant speed control just before a transition from the constant speed control to the deceleration

control.

23. (Previously Presented) A control unit for controlling a motor for use in a printer, as

set forth in claim 20, wherein the stoppage current calculating part uses an angular velocity under

deceleration control just before a transition from the deceleration control to the stoppage control,

as the angular velocity of the motor.

24. (Previously Presented) A control unit for controlling a motor for use in a printer, as

set forth in claim 19, further comprising a period measuring part to measure a period of each

output pulse of an encoder that rotates in accordance with rotation of the motor, the angular

acceleration and the angular velocity of the motor being calculated based on the output of the

period measuring part.

25. (Previously Presented) A control unit for controlling a motor for use in a printer, as set forth in claim 20, wherein the stoppage constant T_{BRK} is decided based on the current value to be applied to the motor under the constant speed control and a positional deviation of an actual position of the motor from the target position.

26. (Previously Presented) A control unit for controlling a motor for use in a printer, as set forth in claim 19, wherein the motor is a carriage motor for driving a carriage.

27. (Previously Presented) A method of controlling a motor for use in a printer, comprising:

calculating inertia of an object to be driven by the motor based on angular acceleration of the motor under deceleration control of the object, and current values to be applied to the motor under acceleration control and a constant speed control of the object, during the deceleration control after a printing processing is completed; and

controlling a current to be applied to the motor by means of the calculated inertia.

28. (Previously Presented) A method of controlling a motor for use in a printer, as set forth in claim 27, wherein the controlling of the current includes:

calculating a stoppage current to be used for stopping the object at a target position based on the calculated inertia, an angular velocity of the motor under the deceleration control of the object, the current value of the motor under the constant speed control of the object, and a stoppage constant T_{BRK}; and

stopping the object by applying the calculated stoppage current to the motor.

29. (Previously Presented) A method of controlling a motor for use in a printer, as set forth in claim 27, wherein the object is a carriage of a serial printer.

30. (Previously Presented) A computer readable storage medium storing control program code for controlling a motor for use in a printer, comprising:

first program code means for calculating inertia of a carriage based on angular acceleration of a carriage motor under deceleration control of the carriage and current values to be applied to the carriage motor under acceleration control and constant speed control of the carriage, during the deceleration control after a printing processing is completed;

second program code means for calculating a stoppage current to be used for stopping the carriage at a target position based on the calculated inertia, an angular velocity of the motor under deceleration control of the carriage, the current value to be applied to the motor under the constant speed control of the carriage, and a stoppage constant T_{BRK}; and

third program code means for stopping the carriage by applying the calculated stoppage current to the motor.